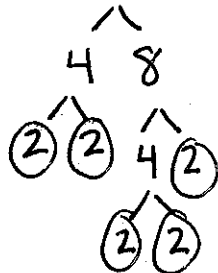


Notes 1/7 - Factoring Using the GCF

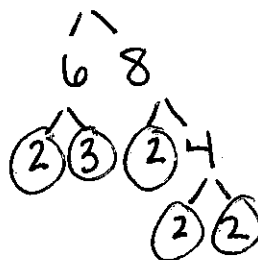
GCF = Greatest Common Factor

→ The biggest number that can be multiplied into a set of numbers

Ex: the GCF of 32 and 48 is 16



1, 2, 4, 8, 16, 32



1, 2, 3, 4, 6, 8, 12, 16, 24, 48

To Factor Using the GCF

1. Find the GCF

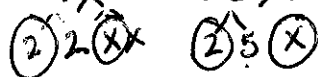
2. Pull/divide out the GCF from each piece

GCF (left + overs)

3. Check your work by distributing

Ex 1:

Factor $4x^2 + 10x$



GCF = $2x$

$$\boxed{2x(2x + 5)}$$

check: $2x(2x + 5)$

$$4x^2 + 10x \checkmark$$

Ex 2: Factor $10x^3y - 5x^2y^2 + 25xy^3$

GCF = $5xy$

$2 \cdot \cancel{5} \cdot \cancel{x} \cdot \cancel{x} \cdot y$ $\cancel{5} \cdot \cancel{x} \cdot \cancel{y} \cdot y$ $\cancel{5} \cdot \cancel{x} \cdot \cancel{y} \cdot y \cdot y$

$$\boxed{5xy(2x^2 - xy + 5y^2)}$$

Ex 3: Simplify

$\cancel{2} \cancel{2}^3 \cdot \cancel{4} \cdot \cancel{b} \cdot \cancel{b}$ $\cancel{2} \cancel{2}^2 \cdot \cancel{5} \cdot \cancel{a} \cdot \cancel{a} \cdot \cancel{b}$

$$\frac{12ab^2 - 40a^2b}{4ab}$$

$$= \frac{\cancel{4ab}(3b - 10a)}{\cancel{4ab}}$$

$$= \boxed{3b - 10a}$$